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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MARVICH, MARIA	

ART UNIT	PAPER NUMBER
1636	

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/807,809	POSSEE ET AL.	
	Examiner	Art Unit	
	Maria B. Marvich, PhD	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *4/23/04* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

HL

DETAILED ACTION

This office action is in response to an amendment filed 1/31/05. Claims 1-26 and 35-50 have been canceled. Claim 27 has been amended. Claims 27-34 are pending in this application.

Response to Amendment

Any rejection of record in the previous action not addressed in this office action is withdrawn. There are no new grounds of rejection herein and therefore, this action is final.

Drawings

Figure 5 last panel and Figures 7 A-C are objected to under 37 CFR 1.83(a) because they fail to show any details as described in the specification. Figure 5, last panel and Figure 7 A-C are photographs of a Western blot and cell immunofluoresence respectively. The images are dark and no bands or cells are visible. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 31 and 32-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 31 and 32-34 are vague and indefinite in that the metes and bounds of "functional gene" in claim 29 are unclear. Claim 29 recites both a baculovirus vector lacking a "functional gene" and a rescue vector comprising a "functional gene". It is unclear which or if both functional genes are referenced in claims 31 and 32-34. **This rejection is maintained for reasons of record in the office action mailed 4/20/04 and 8/26/04 and restated above.**

Response to Arguments- 35 USC § 112, second paragraph

Applicants traverse the claim rejections under 35 U.S.C 112, first paragraph, on page 9 of the amendment filed 1/31/05. Applicants state "a functional gene" means a gene required for viral replication and thus the term is not unclear.

Applicant's arguments filed 1/31/05 have been fully considered but they are not persuasive. Applicants' arguments are insufficient to overcome the rejection, as the rejection is not based upon the unclear nature of the meaning of "functional gene". Rather, the occurrence of two "functional genes" in claim 29 makes it unclear as to which claims 31 and 32-34 are referring.

Claim Rejections - 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 31-34 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **This rejection is maintained for reasons of record in the office action filed 12/18/02 and 4/20/04 and 8/26/04 and is restated below.**

Applicants claim a genus of *lefl-12, dnapol, pl43, p35, ie-1, p47, ORF1629 and pp31* functional fragments or mutations thereof.

The written description requirement for genus claims may be satisfied through sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant identifying characteristics, i.e. structure or other physical and/or chemical properties, by functional characteristics coupled with known or disclosed correlations between function and structure, or by a combination of such characteristics sufficient to show that the applicant was in possession of the claimed genus.

The instant invention is drawn to a method of cloning using a replication defective baculovirus vector in combination with a rescue vector comprising sequences encoding the missing replication gene and a transgene to be cloned. Recombination between the two vectors results in restoration of the non-functional gene and incorporation of the transgene into baculovirus. Claims 31-34 recite that the baculovirus vector lacks and the rescue vector comprises a "functional gene" such as *lefl-12, dnapol, pl43, p35, ie-1, p47, ORF1629 and pp31* or functional fragments or mutation thereof. Specifically, a replication defective ACMNPV genome was generated that was deleted 1) of full-length *lef-2,* 2) of full length *ORF1629, lef-1* and protein kinase 1 or 3) of a small part of *ORF1629*. In the recombination reactions, a rescue vector was used comprising respectively 1) *lef-2* (pUC8/6/8 described on page 20, last paragraph), 2) regions overlapping *lef-2, ORF1629, lef-1* and protein kinase 1 (pAcBglII-C,

second paragraph, page 27) and 3) a vector described only as comprising a lacZ coding region (page 29). The specification does not disclose functional fragments or mutations apart from a single fragment comprised of a 3' fragment of *ORF1629*. Furthermore, the specification does not disclose any of the sequences of the recited genes nor provide a description of the genes such that the structural requirements of the genes can be envisioned. As well, the prior art with the exception of mutational analysis of the *ie-2* gene does not teach structural analysis of the recited genes. Therefore, the relationship between the structure and function of the recited fragments and mutations is unclear. Given the large size and diversity of the Baculovirus family, the diversity of the recited genes, the absence of disclosed or art recognized correlations between structure and function and the large number of potential fragments and mutations, it must be considered that any functional fragment or mutation must be empirically determined. In an unpredictable art, the disclosure of one example in one genus would not represent to the skilled artisan a representative number of species sufficient to show applicants were in possession of claimed genus.

Response to Arguments-35 USC § 112, first paragraph

Applicants traverse the claim rejections under 35 U.S.C 112, first paragraph, on page 12-14 of the amendment filed 1/31/05 and in the Declaration filed 1/31/05 by Dr. Possee. These arguments are the following. Applicants argue that the genes recited in claims 31-34 are well known to be involved in baculovirus replication. It was also known that variations occur naturally and can be made artificially and that different mutations can produce genes that still function and retain at least a part of their activity. Dr Possee in the Declaration filed 1/313/05

states that postgraduate students can produce replication deficient baculovirus lacking the genes and undergraduates work on insect genome as part of their course work. Further, he explains that five baculovirus have been sequenced and 19 baculovirus genes are essential for late gene expression. Removal of any of these genes renders the virus unable to replicate. Hence it is applicants' conclusion that identification of functional fragments or mutations would simply require a routine comparison of the nucleotide sequences.

Applicants' arguments filed 1/3/05 have been fully considered but they are not persuasive. Adequate written description requires more than a mere statement that the fragment and mutation is part of the invention and a reference to a potential method for isolating it. The written description requirement may be satisfied through sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant identifying characteristics, i.e. structure or other physical and/or chemical properties, by functional characteristics coupled with known or disclosed correlations between function and structure, or by a combination of such characteristics. In the instant case, applicants have simply stated that the genes, functional fragments and mutations are part of the invention. Functional fragments and mutation encompasses a very broad genus of sequences. Fragments can be as small as 2 base pairs and mutations can encompasses any of a number of deletions, substitutions, insertions and combinations therein. Applicants' disclosure of a single example of fragments is not accompanied by a description of the fragment such that one of skill in the art would envision the broad genus of "functional fragments". Applicants have provided no disclosures of mutations. Furthermore, applicants have not provided the structural requirements of the genus of genes. Therefore, the relationship between structure and function is unclear.

Given the lack of disclosure as to the structural requirements of the fragments and mutations of the diverse group of recited genes, the skilled artisan cannot envision the detailed structure of the broad class of functional fragments and mutations of a diverse set of genes regardless of the complexity or simplicity of the method of isolation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al (US 6,225,060; see entire document) in view of Patel et al (NAR, Vol 20, pp 97-104; see entire document). **This rejection is maintained for reasons of record in the office action filed 12/18/02, 4/24/04 and 8/26/04 and restated below.**

Applicants claim a method of cloning a gene comprising the steps of providing a naked replication-deficient baculovirus vector and a "rescue" vector encoding a nucleic acid that restores replication and a transgene. Functional genes are lacking in the baculovirus vector such as *lef* genes and *ie*. The vector is furthermore capable of being maintained in an intermediate host such as yeast or bacteria.

Clark et al teach use of a baculovirus vector for expression of genetic material. Baculovirus vectors comprising transgenes are generated without utilizing cloning steps (see e.g. column 5, line 1-7). As shown in figure two, the method involves the co-transfection of a DNA

from a replication deficient baculovirus, deleted of p35 and orf-1629, and a "rescue" vector comprised of baculovirus p35 and orf-1629 genes as well as the transgene. The vector is "naked" as it is not a viral particle. Following co-transfection into insect cells recombinant baculovirus are selected by screening for replication enablement as a selectable marker (see e.g. column 5, line 1-7 and column 3, line 35-52).

Clark et al do not teach the use of a replication deficient baculovirus vector that is capable of being maintained in yeast or bacteria cells.

Patel et al teach use of a baculovirus vector that can replicate in *Saccharomyces cerevisiae* as well as insect cells. A shuttle vector YCbv was generated that could be used to grow in bacteria and yeast and could be used as a recipient of transgene insertion through homologous recombination (see e.g. page 100, column 1, line 1-8). Patel et al developed a vector capable of replication in yeast to reduce time consumption (Patel et al, page 97, column 2, third paragraph) and cost due to the lack of need for rounds of plaque purification and the ability to isolate multiple recombinants simultaneously (Patel et al, page 103, column 2, first paragraph). Previous methods of using baculovirus that are only capable of replicating in insects were said to be time-consuming and tedious due to the presence of parental virus.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the replication defective baculovirus vector taught by Clark et al with the yeast or bacterial origins of replication taught by Patel et al because Clark et al teach that it is within the ordinary skill of the art to express replication defective baculovirus in a cell and because Patel teach that it is within the ordinary skill of the art to use yeast or bacteria as host cells for recombinant baculovirus vectors. One would have been motivated to do so in order to

receive the expected benefit of reducing time consumption (Patel et al, page 97, column 2, third paragraph) and reducing cost due to the lack of need for rounds of plaque purification and the ability to isolate multiple recombinants simultaneously (Patel et al, page 103, column 2, first paragraph). Based upon the teachings of the cited references, the high skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

Claims 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitts et al. (Biotechniques, Vol 14 pp 810-817; see entire document) in view of Patel et al. (NAR, Vol 20 pp 97-104; see entire document). **This rejection is maintained for reasons of record in the office action filed 7/1/03 and is restated below.**

Applicants claim a method of cloning a gene comprising the steps of providing a replication-deficient baculovirus vector and a "rescue" vector encoding a nucleic acid that restores replication and a transgene. Functional genes such as *lef*, *ie* and *ORF1629* are removed from the baculovirus vector. The vector is furthermore capable of being maintained in an intermediate host such as yeast or bacteria.

Kitts et al. teach use of a method for producing recombinant Baculovirus in which an essential gene for replication i.e. *ORF1629* is removed or inactivated from the viral genome (see e.g. figure 1). Cells are transfected with a transfer vector (i.e.BacPAK5 and BacPAK6) that contain *ORF1629* linked to a target gene and a baculovirus vector deleted of *ORF1629*. The vector is "naked" as it is not a viral particle. The baculovirus is rescued following recombination

between the genome and BacPAK5 or 6 and thus are replication enabled (see e.g. page 811, column 3, last paragraph). The target gene is then contained in the Baculovirus genome.

Kitts et al do not teach that the replication defective baculovirus vector that is capable of being maintained in yeast or bacteria cells.

Patel et al teach use of a baculovirus vector that can replicate in *Saccharomyces cerevisiae* as well as insect cells. A shuttle vector YCbv was generated that could be used to grow in bacteria and yeast and could be used as a recipient of transgene insertion through homologous recombination (see e.g. page 100, column 1, line 1-8). Patel et al developed a vector capable of replication in yeast to reduce time consumption (Patel et al, page 97, column 2, third paragraph) and cost due to the lack of need for rounds of plaque purification and the ability to isolate multiple recombinants simultaneously (Patel et al, page 103, column 2, first paragraph). Previous methods of using baculovirus that are only capable of replicating in insects were said to be time-consuming and tedious due to the presence of parental virus.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the replication defective baculovirus vector taught by Kitts et al with the yeast or bacterial origin of replication taught by Patel et al because Kitts et al teach that it is within the ordinary skill of the art to express replication defective in a cell and because Patel teach that it is within the ordinary skill of the art to use yeast or bacteria as host cells for recombinant vectors. One would have been motivated to do so in order to receive the expected benefit of reducing time consumption (Patel et al, page 97, column 2, third paragraph) and reducing cost due to the lack of need for rounds of plaque purification and the ability to isolate multiple recombinants simultaneously (Patel et al, page 103, column 2, first paragraph). Based

upon the teachings of the cited references, the high skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

Response to Arguments- 35 USC § 103

Applicants traverse the claim rejections under 35 U.S.C 103(a) over Clark et al (Clark) or Kitts et al (Kitts) in view of Patel et al (Patel) on page 15-19 of the amendment and pages 8-18 of the Declaration filed 1/31/05. Applicants argue the following. 1) The claimed method allows for production of recombinant baculovirus not contaminated with parental baculovirus or with baculovirus without the foreign DNA insertions and saves considerable time and money in the laboratory by avoiding purification processes. As well, use of naked DNA allows the baculovirus and foreign DNA to be co-transfected saving time and money and is more efficient.

Applicants' arguments on pages 8-10 of the Declaration and pages 15-16 of the amendment filed 1/31/05 have been fully considered but they are not persuasive. Applicants' appear to be arguing that they have solved a long felt need in the art by developing a vector that is capable of replicating in yeast or bacteria. Patel teaches a vector that is capable of replicating in yeast. The vector was designed to save time and money. As well applicants appear to be arguing that the difference between the instant invention and that of the prior art results in different properties of baculovirus not contaminated with parental or non-transgene containing baculovirus. However, applicants have not supported this claim by factual evidence only objective arguments (discussed further below). The MPEP teaches, 716.02(b) that it is applicants burden to demonstrate that the difference in results is significant. Finally, both the methods of

Kitts and Clark involve co-transfection into the cell. Therefore, the benefits associated with co-transfection are not specifically advantageous to the instant invention.

2) Applicants argue on pages 10-13 of the Declaration and pages 18-19 of the amendment filed 1/31/05 that Clark fails to teach, suggest or provide motivation to use a vector capable of being maintained in an intermediate host. Applicants argue that the only way to replicate the vector of Clark, which is p35 deficient, is to use an apoptosis-deficient host cell line, *Trichoplusia ni.* It is applicants argument that use of *T. ni.* creates a heterogenous population and a reduced production of the desired protein. As well, the vector of Clark replicates at low levels in normal insect cells resulting in contamination of the recombinant particles with parental baculovirus. To this end applicants reference several teachings that demonstrate that deletion of the p35 gene from the baculovirus does not completely prevent virus replication. Applicants conclude that Clark suggests use of only Sf insect cells and fails to teach any other cells. Therefore, it is the belief of applicants that only the benefit of hindsight would have lead to alternative cells. Furthermore, in the amendment applicants argue that a person of skill in the art would not have been motivated to modify the teachings of Clark et al as Clark fails to teach or suggest use of bacteria or yeast for amplification of the parental baculovirus. In fact applicants argue that Clark teaches that it would be cumbersome and complicated (see col 2, line 44).

Applicant's arguments filed on pages 10-13 of the Declaration and pages 18-19 filed 1/31/05 have been fully considered but they are not persuasive. First, the instant claims recite only that the vector is capable of being maintained in yeast or bacteria. It is unclear what is required of a vector that is being maintained in yeast or bacteria. Given the broadest interpretation of the claims, minimal requirements would be that yeast or bacteria should be able

to be transformed with the vector. Minimally, this would be expected to occur given the teachings of Patel, which demonstrates that yeast cells can be transformed with baculovirus. Patel has further modified the vector to comprise a replication origin that would provide replication function in the yeast cells. It is unclear that even low levels of replication in the yeast cell would not occur absent this origin. However, applicants have provided no evidence that the vector of Clark cannot be maintained in yeast or bacteria. Applicants argue that the vector cannot be grown in an intermediate host but must be grown in *Trichoplusia ni.* However, support for these statements have not been found. Applicants have only presented objective evidence that the vector of Clark is not capable of being maintained in an intermediate host and that it must be grown in *T. ni.* To be of probative value, the objective evidence should be supported by actual proof and not just arguments. Applicants argue that the vector of Clark due to its mutation in p35 is not capable of being replicated in an intermediate host. Therefore, the vector is subject to contamination and will also grow in normal insect cells absent a rescue vector. However, the vector of Clark is a double mutant with not only the p35 gene deleted but also the orf1629 gene. Inclusion of the mutation in the ORF1629 gene, which by applicants' own disclosure is adequate for use in the instant invention and absent evidence to the contrary, should block leaky viral replication in a normal insect host. Clark states that the use of a heterologous host such as yeast is cumbersome and complicated in describing the advantages and disadvantages of using this system. However, Clark summarizes by saying that reconstitution of the baculovirus replicon in a heterologous host is consider preferable for selection of recombinant species (see col 3, line 1-3). Clark actually entertains the notion that hosts other than insects can be used. For example, DNA is transfected into suitable hosts such as insect

cells (see e.g. col 6, line 9). As well, the preferred host cell is an insect cell. The transfection is not thus limited to insect cells. In fact, host cells are described in col 11, line 50-56 as cells such as prokaryotic or eukaryotic for replication of baculovirus.

3) Applicants argue on pages 13 and 17-18 of the Declaration and pages 19-21 filed 1/31/05 that Kitts et al uses linearized baculovirus DNA in combination with standard transfer vectors which results in the production of only 30-40% of the recombinant viruses in the first round of plaque purification. As well, applicants state that Kitts shows that there is a level of background parental virus between 1% and 14%. The instant invention is thus more efficient and advantageous. On pages 17-18 applicants continue that the method of digestion, a small proportion of undigested viruses will always remain intact. The circular DNA remains infectious and gives rise to parental virus DNA when attempting to make a recombinant baculovirus. As evidence that this leads to 1% to 14% contaminants, applicants point to Table 1. The occurrence of 95% recombinants using BAKPAK6 and 8% using BAKPAK5 indicates to applicant that 5%-8% of the progeny had neither parental nor recombinant phenotype, which are unwanted baculovirus.

Applicant's arguments filed on pages 13 and 17-18 of the Declaration filed 1/31/05 have been fully considered but they are not persuasive. The instant claims do not limit the method to circular vectors nor is the yield of recombinant vector a recited limitation. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). During prosecution, claims must be interpreted as broadly as their terms reasonably allow. Applicants would like to rely on descriptions of the invention that are not reasonably applied to the claims as

written. Kitts teaches that a method of cloning a transgene using a baculovirus vector, BAKPAK6 generates 95% recombinants with no parental contaminants. This provides evidence that the invention of Kitts provides the claimed advantages of the instant invention.

4) Applicants argue on pages 14-16 in the Declaration filed 1/31/05 that Patel fails to teach suggest or provide motivation to derive the claimed invention and fails to render it obvious. Applicants argue that Patel uses yeast cells for a completely different reason than that proposed in the instant application- for recombination and not for maintenance. As well, the virus of Patel is infectious and is not defective. Applicants argue that Patel discourages one of skill in the art to combine its teaching with those of Clark by teaching that the yeast system allows for rapid generation of recombination virus without any background parental virus using yeast as the insect cells were know to produce parental recombination. Applicants argue that Patel fails to overcome the time consuming difficulties associated with the use of insect cells for recombination. Application of the instant methods in the system of Patel would not result in the instant method, as the aim of Patel is to avoid using insect cells.

Applicant's arguments filed on pages 14-16 of the Declaration filed 1/31/05 have been fully considered but they are not persuasive. The combination of Clark and Patel et al render the instant invention obvious. Patel need not provide the same motivation as the instant invention. In fact the MPEP (see MPEP 2144) teaches that "The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant." Clark teaches all of the recited method steps such as a naked replication deficient baculovirus vector with a rescue vector and allowing them

to recombine in an insect host. Therefore, Patel need not teach recombination in an insect cell. Clark does not demonstrate that the baculovirus vector is capable of being maintained in an intermediate host such as yeast or bacteria. While it is not clear that the vector cannot, Patel has been provided as teaching that these vectors were known in the art and the means of maintaining baculovirus in intermediate hosts was well known in the art.

The motivation to combine the references is found in Patel, which specifically addresses the need for a method of maintaining baculovirus that is rapid and efficient and ensures that there is no background of parental virus and eliminates the need for time-consuming plaque assays for the production of baculovirus vectors for cloning. The solution according to Patel et al is the propagation of the virus i.e. in yeast (page 103, column 1), which overcomes many difficulties and time-consuming aspects of existing methods. As to the combination of Kitts with Patel. Kitts recognizes the long felt need to develop a system in which parental contamination is removed and recognizes Patel's method of generating a vector that is capable of being maintained in an intermediate host as a significant improvement over traditional procedures (see e.g. Kitts et al, pages 810, col 3, paragraph 2).

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria B. Marvich, PhD whose telephone number is (571)-272-0774. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel, PhD can be reached on (571)-272-0781. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maria B Marvich, PhD
Examiner
Art Unit 1636

Aril 15, 2005

GERRY LEFFERS
PRIMARY EXAMINER